

New Expectations and New Realities: Education, Human Capital, and the Knowledge Economy



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The Importance of Higher Education



- The South is in a national race to develop a knowledge-based society that facilitates competition in the information marketplace. The academic imperative to maximize the achievement of all students must come to the forefront.
- Major gains are unlikely unless higher education works cooperatively with the K-12 sector to ensure that students are prepared for college, educational costs remain affordable, and a greater percentage of students to enter and graduate from college on time.
- By bringing these pieces of the puzzle together, the South will be able to realize a higher degree of performance in a variety of educational, economic, and social categories.



Re-examining the Public Agenda for Higher Education



- Policymakers need to evaluate their state canvas of educational, economic, and demographic conditions.
- States must use this analysis to frame the development of a broad-based plan centered on improving the quality of life for all citizens.
- States should re-examine the missions of their systems of higher education asking ...

How can higher education serve the broad needs of states, rather than how can states serve higher education?

- The re-examination of the Public Agenda for higher education will thereby provide a center of consensus for statewide and regional planning/policy initiatives.



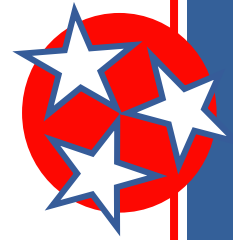
Educational Planning & Policy



- *Education and the economy are increasingly intertwined as human capital becomes a centerpiece of the knowledge economy.*
- State budgets are increasingly challenged by fluctuating state revenues.
- The demographic characteristics of the South are not uniform across the region. The current use of only state-level indicators in the planning process limits the ability of planners to differentiate between the various regions of the SREB states.
- Educational planning indicators need to be linked with economic and demographic variables to provide a legitimate representation of the region's citizens.



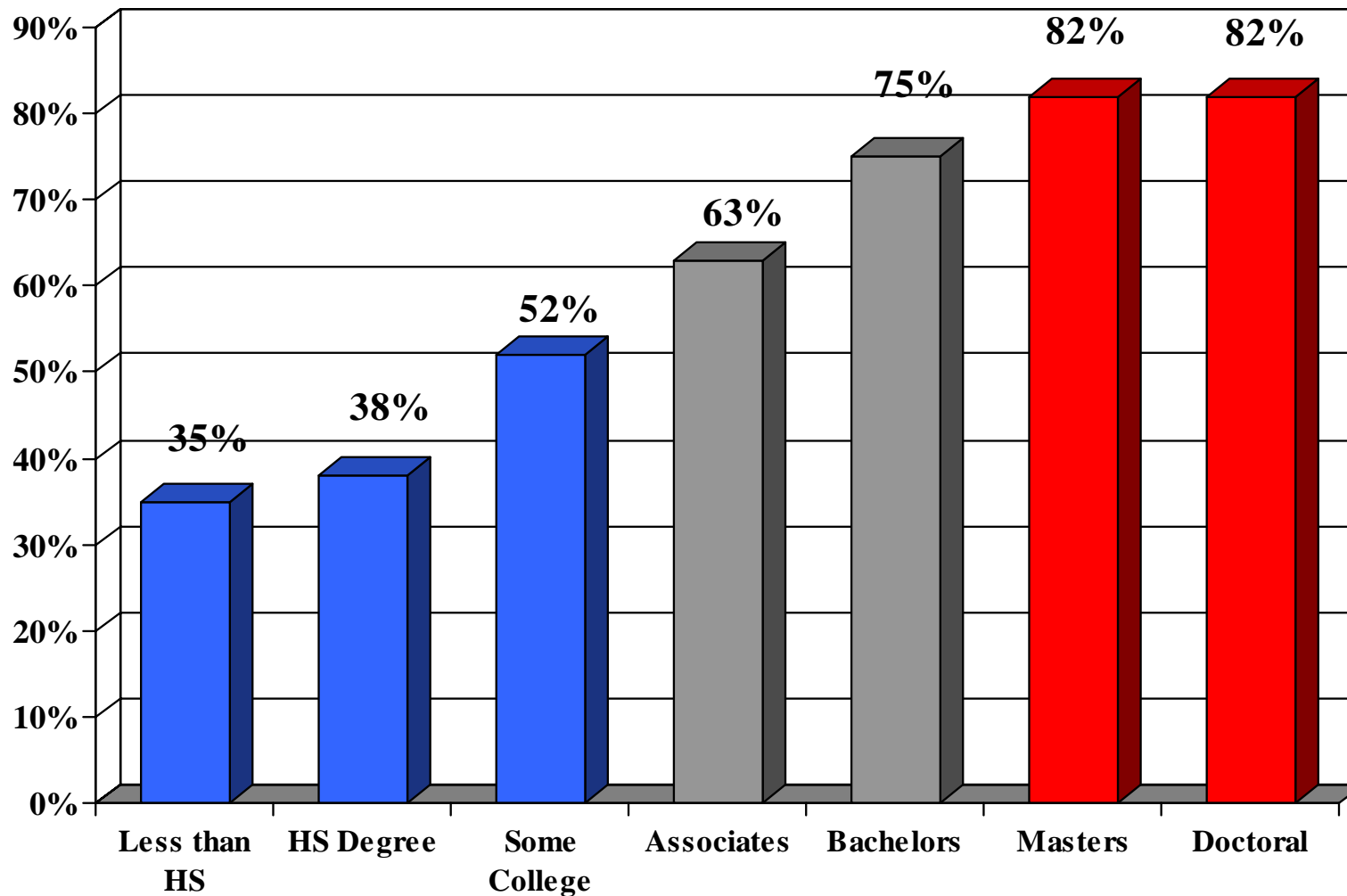
The Knowledge Economy and Higher Education



- In the Knowledge Economy, education, technology, and learning are the keys to sustainable economic growth.
- In order to remain competitive, states must work to develop policies that incorporate human, intellectual, and financial capital.
- Individuals and society derive economic and social benefits from human capital investments such as
 - Increased workforce flexibility
 - Improved economic productivity
 - General betterment of society



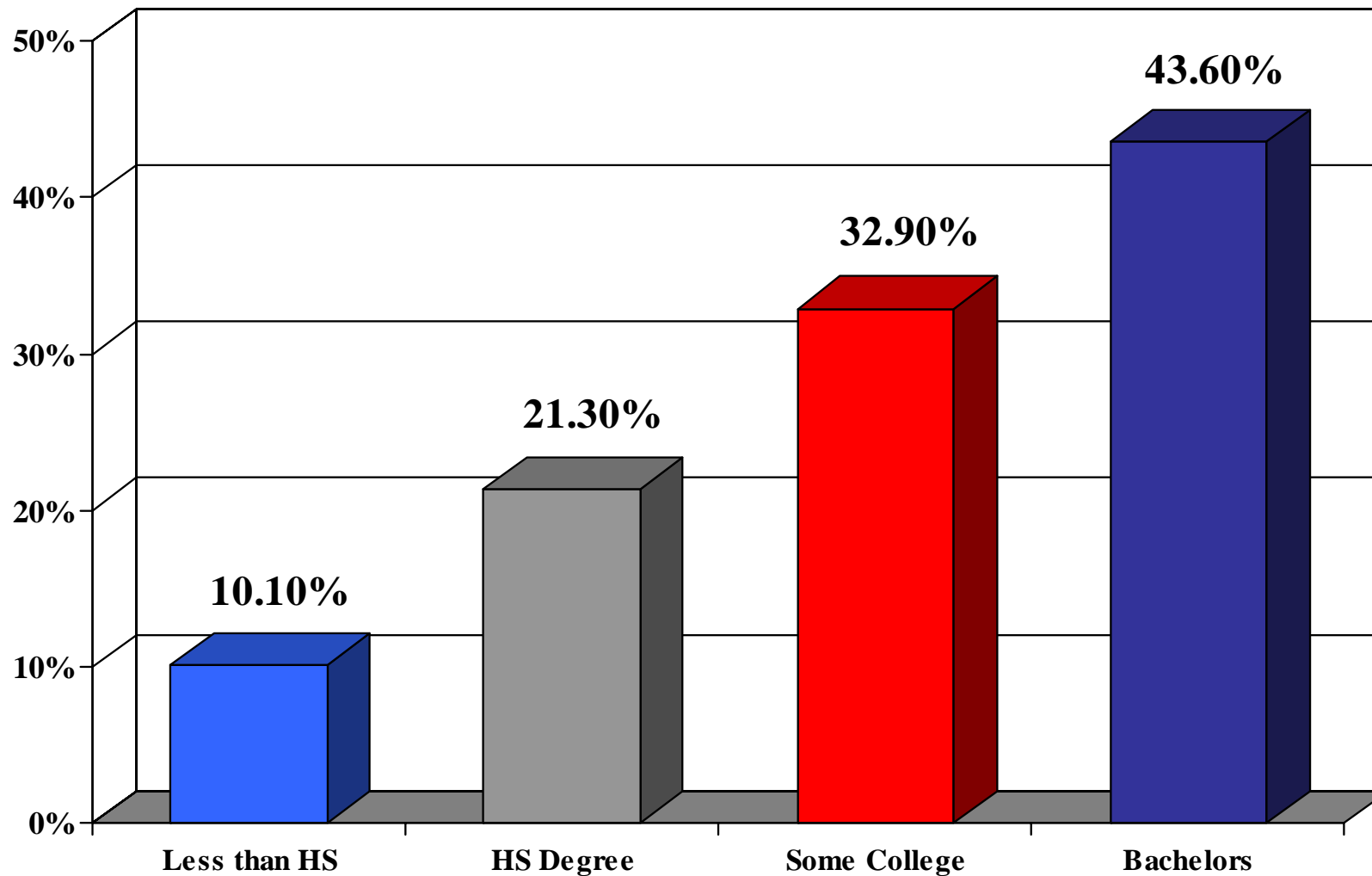
Rate of Voter Participation by Educational Attainment



Source: *Postsecondary Opportunities*, June, 2002, # 120: p.11



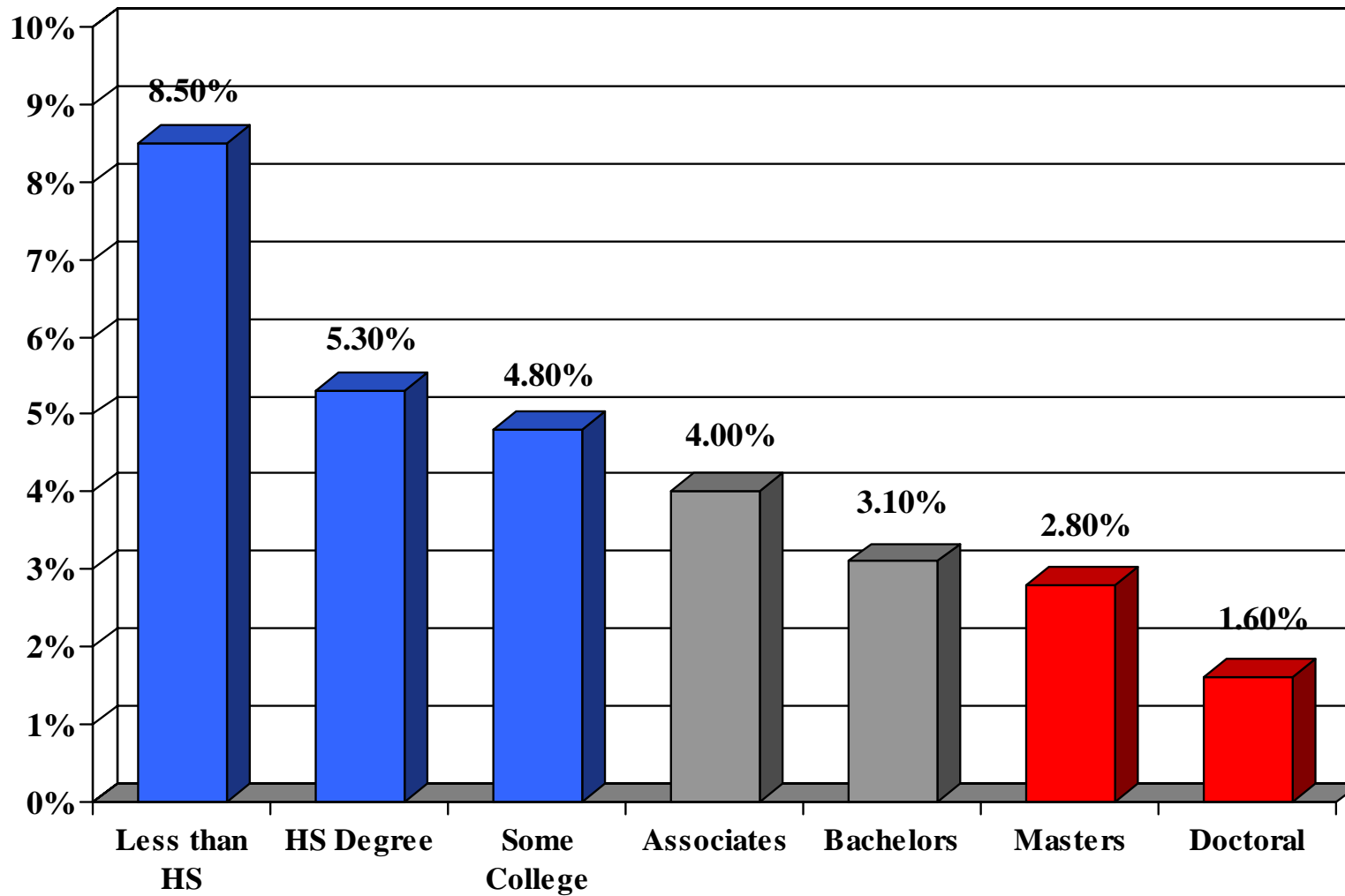
Rate of Volunteerism by Educational Attainment



Source: *Postsecondary Opportunities*, Jan. 2003, # 127: p.11



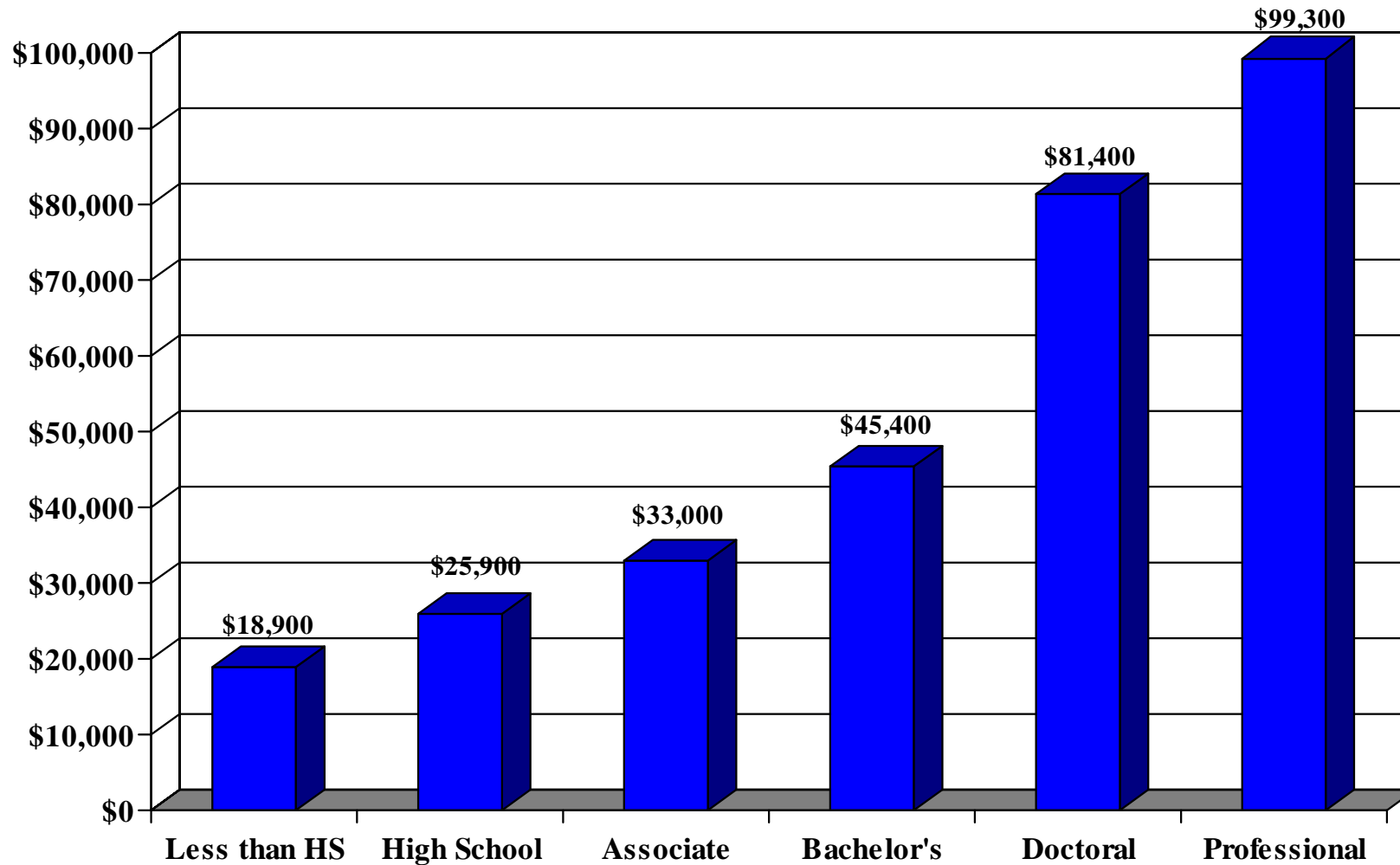
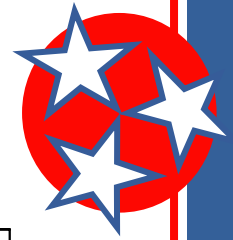
Unemployment Rate by Educational Attainment



Source: U.S. Census Bureau, 2002 Current Population Survey



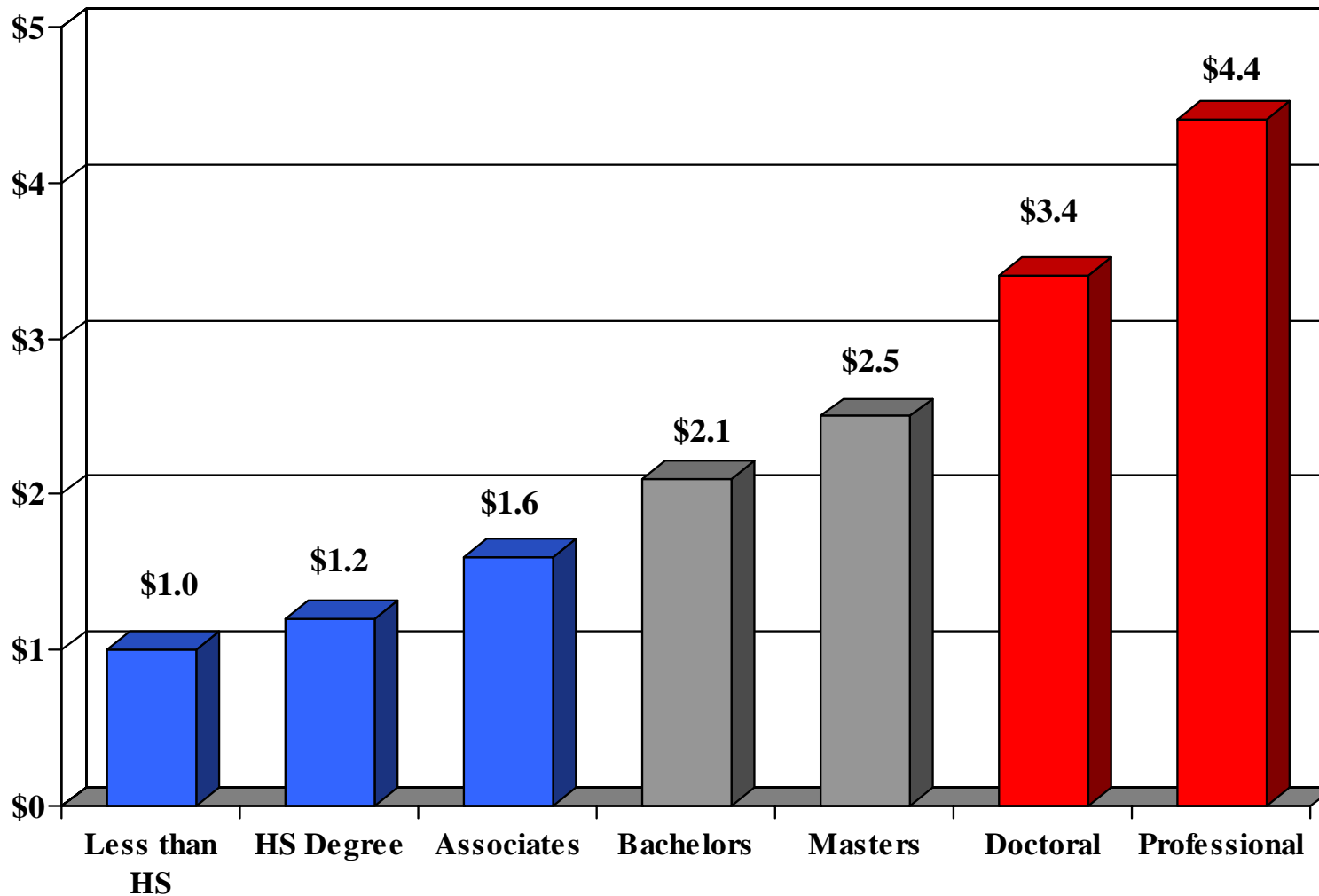
Median Income by Level of Educational Attainment



Source: U.S. Census Bureau, Current Population Survey, 1998-2000



Lifetime Earnings by Educational Attainment (in millions of 1999 dollars)



Source: U.S. Census Bureau, 2002 Current Population Survey



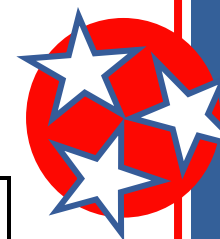
Policy Challenges for the South



- While South has historically benefited from a favorable business climate, a diligent and inexpensive workforce, and strategic geography, significant weaknesses persist in the ability to meet the needs of the Knowledge Economy.
- The region has almost 400,000 fewer manufacturing jobs now than it did a decade ago. The South has made only incremental progress in improving its workforce.
- A large percentage of the existing workforce is not oriented towards the Knowledge Economy. The region is relatively undereducated and there are severe leakages in the P-16 educational pipeline.



Cracks in the P-16 Education Pipeline



State	For every 100 Ninth Graders	Graduate from High School	Enter College	Still Enrolled Sophomore Year	Graduate within 6 years
Massachusetts	100	75	52	41	28
Iowa	100	83	54	37	28
Pennsylvania	100	75	46	36	27
Virginia	100	74	39	30	20
Delaware	100	61	36	28	19
Missouri	100	73	39	27	18
North Carolina	100	59	38	28	18
Maryland	100	73	40	30	18
California	100	69	33	22	17
West Virginia	100	75	39	27	15
Florida	100	55	32	23	14
South Carolina	100	51	34	23	14
Tennessee	100	55	34	23	14
Alabama	100	59	34	23	13
Kentucky	100	66	39	25	13
Mississippi	100	56	36	23	13
Arkansas	100	74	39	26	12
Louisiana	100	56	33	22	12
Oklahoma	100	73	36	23	12
Georgia	100	52	32	21	12
Texas	100	62	32	19	11
United States	100	67	38	26	18

Source: www.higheredinfo.org

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Educational Attainment - SREB States

Percentage of Population 25 or Older with a Bachelor's Degree (2000 Full Census)					
	1990	1995	1999	2000	% Change
United States	20.3%	23.0%	25.2%	24.4%	4.1%
SREB States	18.6%	19.9%	21.7%	22.4%	3.8%
Alabama	15.7%	17.3%	21.8%	19.0%	3.3%
Arkansas	13.3%	14.2%	17.3%	16.7%	3.4%
Delaware	21.4%	22.9%	24.0%	25.0%	3.6%
Florida	18.3%	22.1%	21.6%	22.3%	4.0%
Georgia	19.6%	22.7%	21.5%	24.3%	4.7%
Kentucky	13.6%	19.3%	19.8%	17.1%	3.5%
Louisiana	16.1%	20.1%	20.7%	18.7%	2.6%
Maryland	26.5%	26.4%	34.7%	31.4%	4.9%
Mississippi	14.7%	17.6%	19.2%	16.9%	2.2%
North Carolina	17.4%	20.6%	23.9%	22.5%	5.1%
Oklahoma	17.8%	19.1%	23.7%	20.3%	2.5%
South Carolina	16.6%	18.2%	20.9%	20.4%	3.8%
Tennessee	16.0%	17.8%	17.7%	19.6%	3.6%
Texas	20.3%	22.0%	24.4%	23.2%	2.9%
Virginia	24.5%	26.0%	31.6%	29.5%	5.0%
West Virginia	12.3%	12.7%	17.9%	14.8%	2.5%

TN ranked 10th in the SREB in 2000, an increase of one position over 1990.

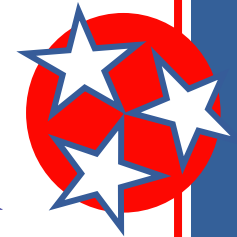
To reach the average attainment level of our border states, we need to create 181,530 additional college graduates

SREB Factbook 2002-03



The Progressive Policy Institute

- New Economies Index



STATES BY RANK					
Rank 2002	Score 2002	State	Rank 1999	Score 1999	Rank Change
1	90	Massachusetts	1	82.3	0
2	86.2	Washington	4	69	2
3	85.5	California	2	74.3	-1
4	84.3	Colorado	3	72.3	-1
5	75.6	Maryland	11	59.2	6
8	72.1	Virginia	12	58.8	4
9	70.5	Delaware	9	59.9	0
14	67.6	Texas	17	52.3	3
18	62.7	Florida	20	50.8	2
22	60.1	Georgia	25	46.6	3
26	57.5	NC	30	45.2	4
34	54.1	Oklahoma	40	38.6	6
39	52.2	Tennessee	31	45.1	-8
41	51.1	SC	38	39.7	-3
42	48.6	Kentucky	39	39.4	-3
45	45.9	Louisiana	47	28.2	2
47	45.3	Alabama	44	32.3	-3
48	41.7	Arkansas	49	26.2	1
49	40.9	Mississippi	50	22.6	1
50	40.7	West Virginia	48	26.8	-2

- TN rank declines by 8 in three years
- Historically, the economies of states such as TN depend on natural resources, or on mass production manufacturing, and rely on low production costs rather than innovative capacity, to gain a competitive advantage.
- Innovative capacity (derived through universities, R&D investments, scientists and engineers, and entrepreneurial drive) is increasingly what drives competitive success in the New Economy.



Educational Planning & Policy



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- *State budgets are increasingly challenged by fluctuating state revenues.*
- The demographic characteristics of the South are not uniform from region to region. The current use of only state-level indicators in the planning process limits the ability of planners to differentiate between the various regions of the SREB states.
- Educational planning indicators need to be linked with economic and demographic variables to provide a legitimate representation of the region's citizens.



State and Local Surplus as a % of Revenues (Boyd 2002)



Delaware	-0.2
Maryland	-0.5
Oklahoma	-1.3
West Virginia	-2.9
Virginia	-3.0
Georgia	-3.2
Kentucky	-3.4
Arkansas	-3.5
North Carolina	-5.6
Texas	-5.7
Florida	-5.7
South Carolina	-8.6
Mississippi	-8.6
Louisiana	-8.8
Alabama	-9.2
Tennessee	-9.7
U.S. Avg.	-3.4

- Most states will face continuing difficulty financing current services with existing revenue structures, and will not have resources for real increases in spending.
- A total of 44 states face gaps under these assumptions, with 12 states facing gaps of 5 percent or more of revenue.
- While these gaps are smaller than the current crisis-induced gaps in many state budgets that have resulted from swift sharp shifts in the economy and financial markets, they suggest that even after this crisis states and local governments will face continuing stress.



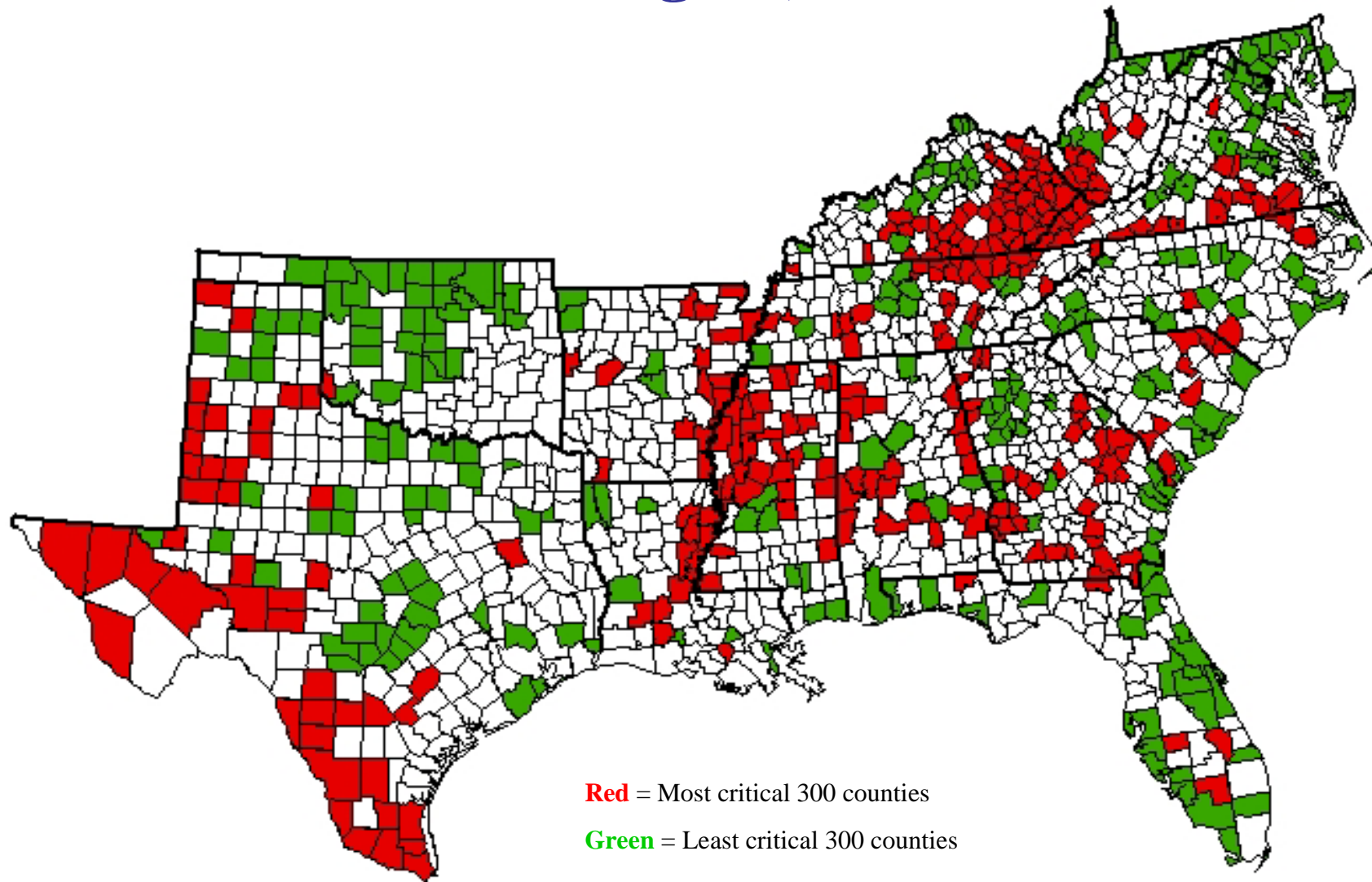
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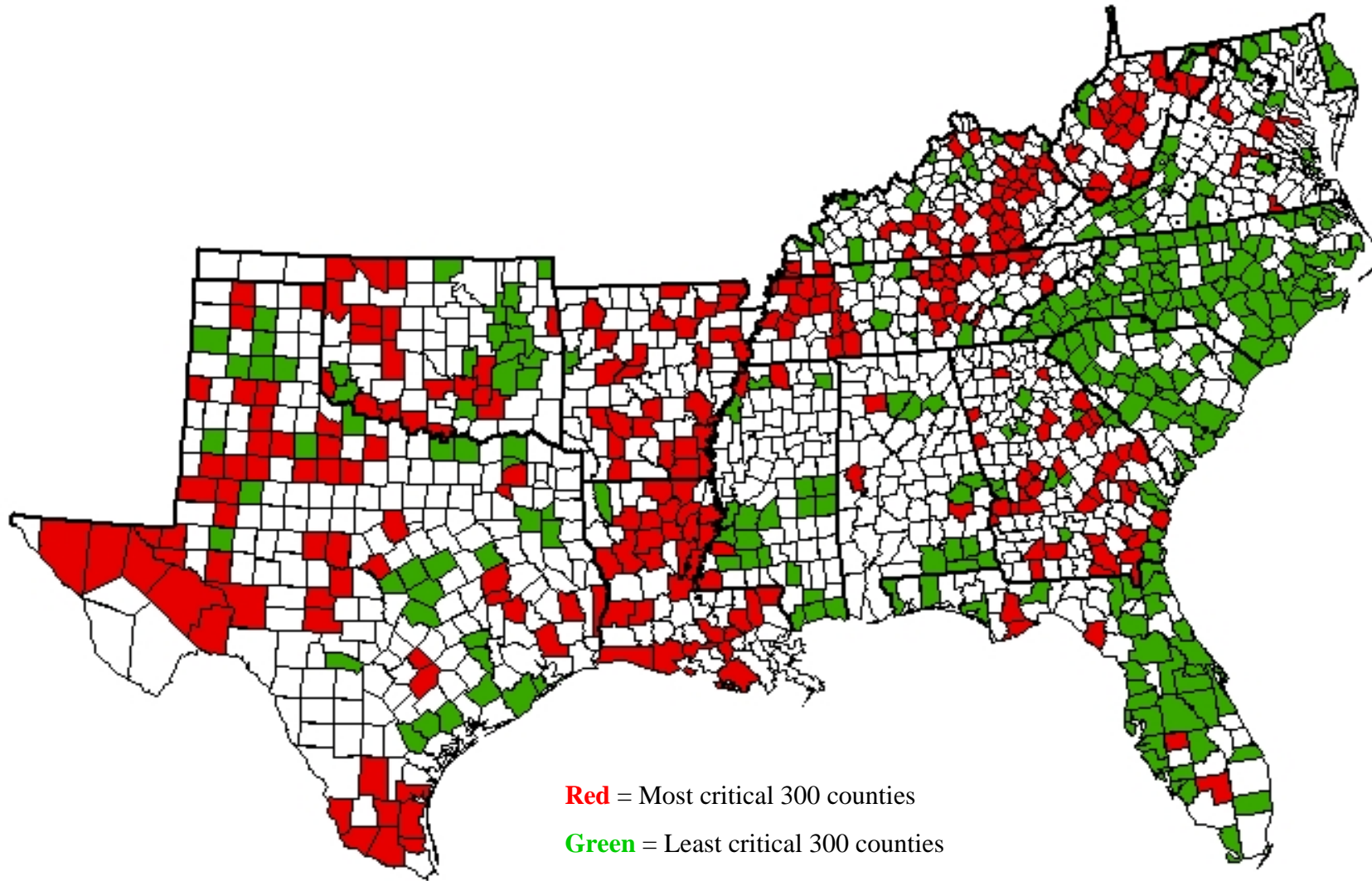
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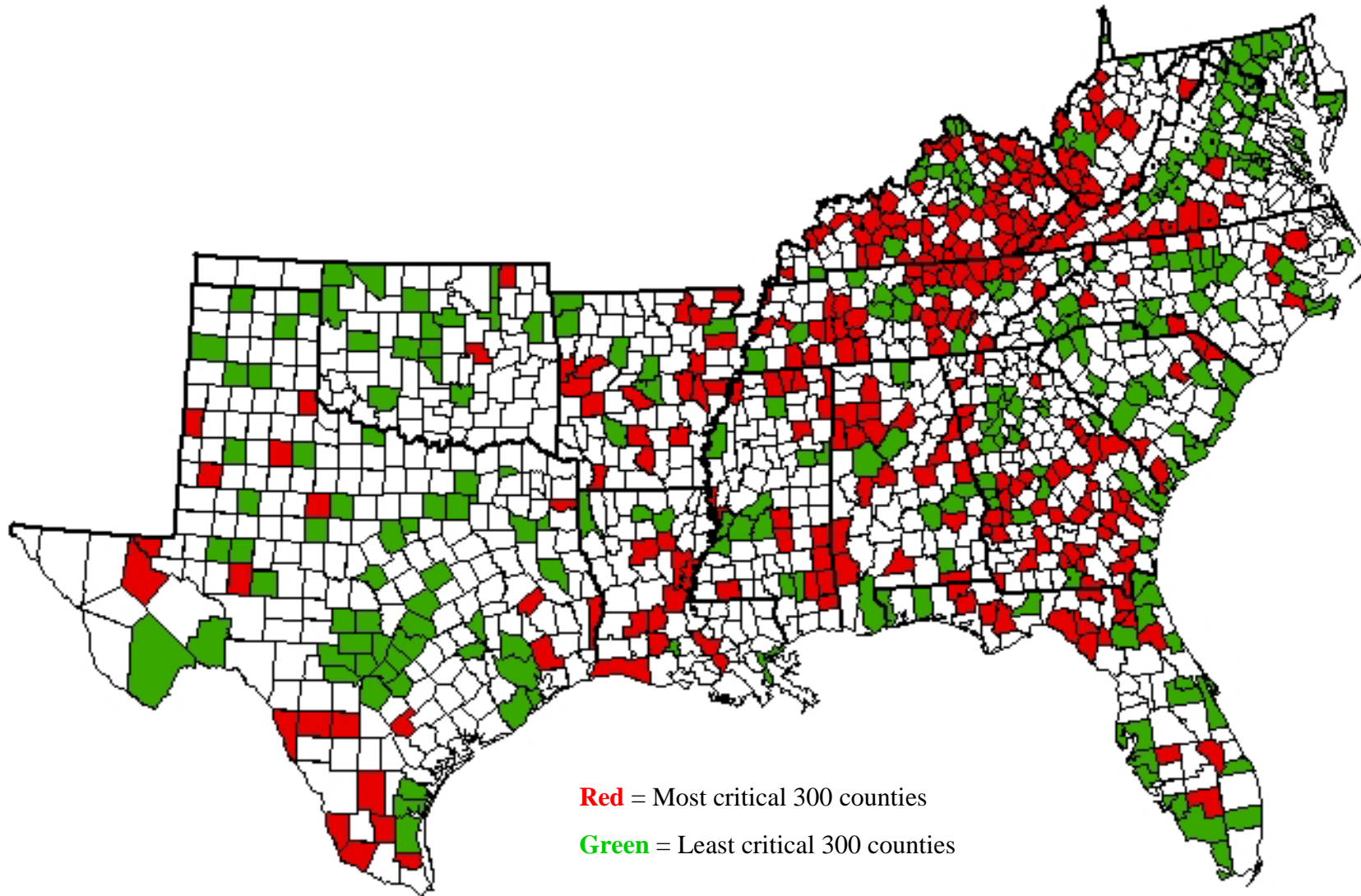
Percent of Adult Population with High School Degree, 2000



Percent of Adult Population with Associate Degree, 2000



Percent of Adult Population with Bachelor's Degree, 2000

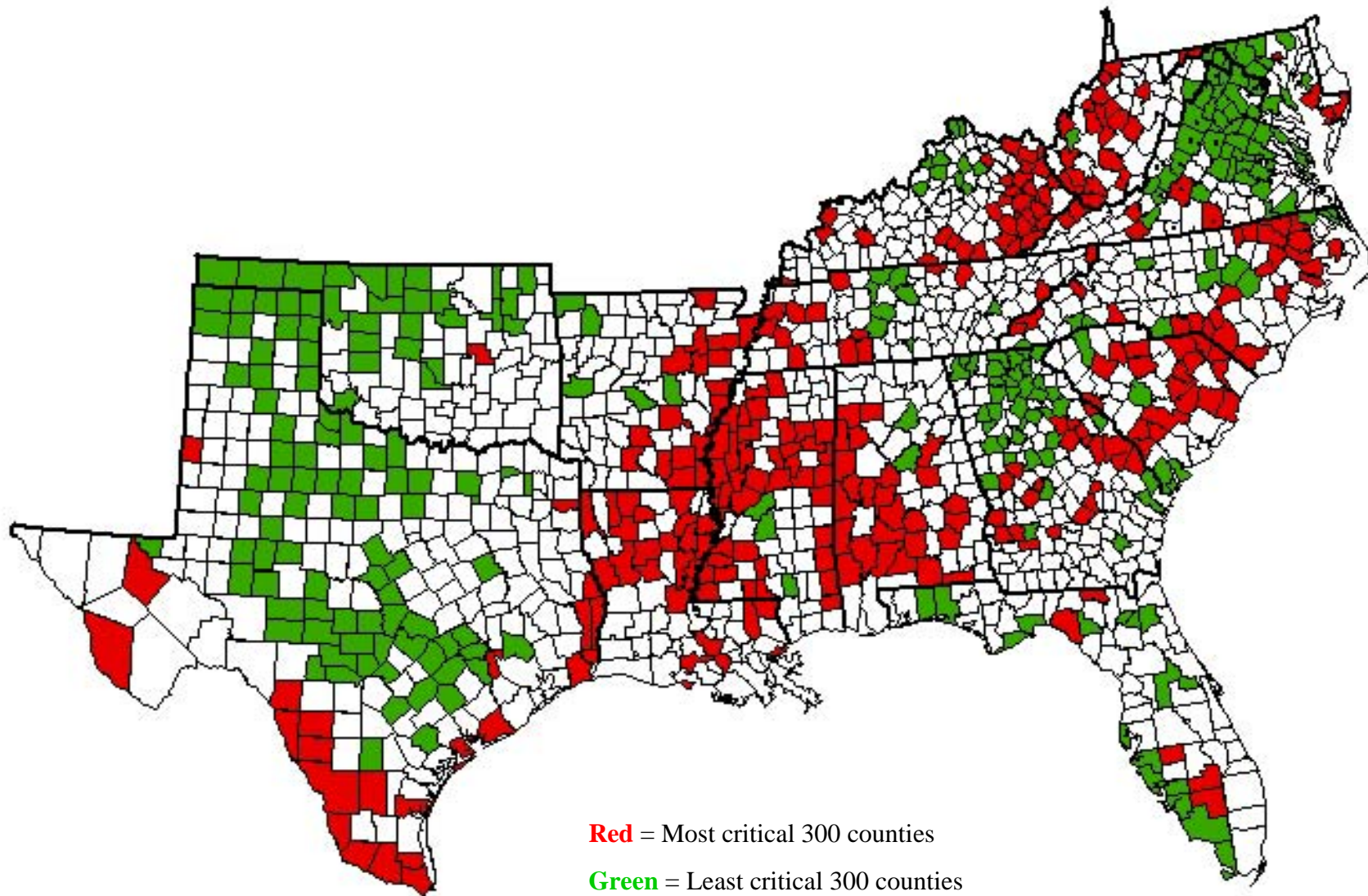


Red = Most critical 300 counties

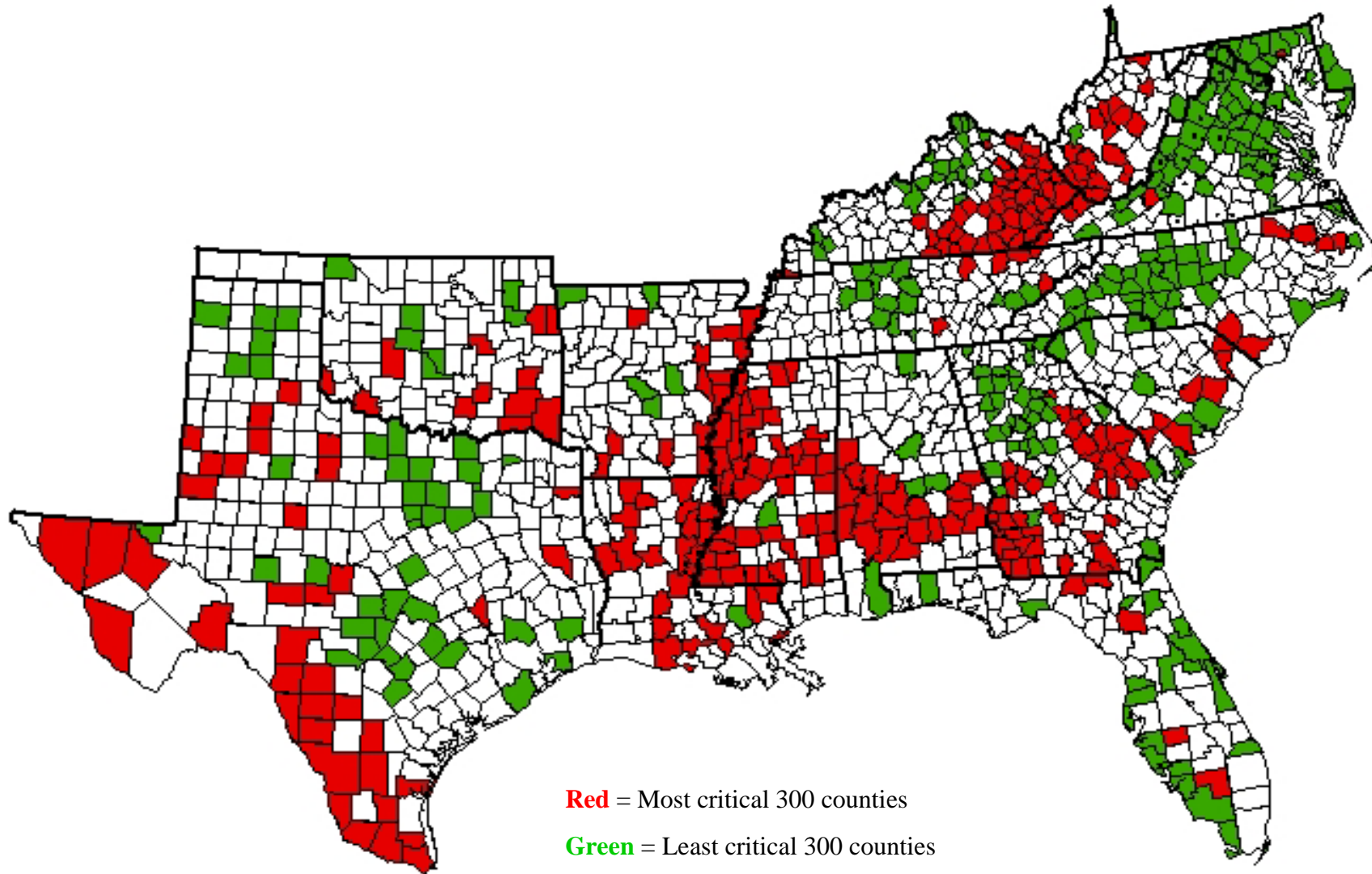
Green = Least critical 300 counties



Average Unemployment, 2000-2001



Percent of Population in Poverty, 2000

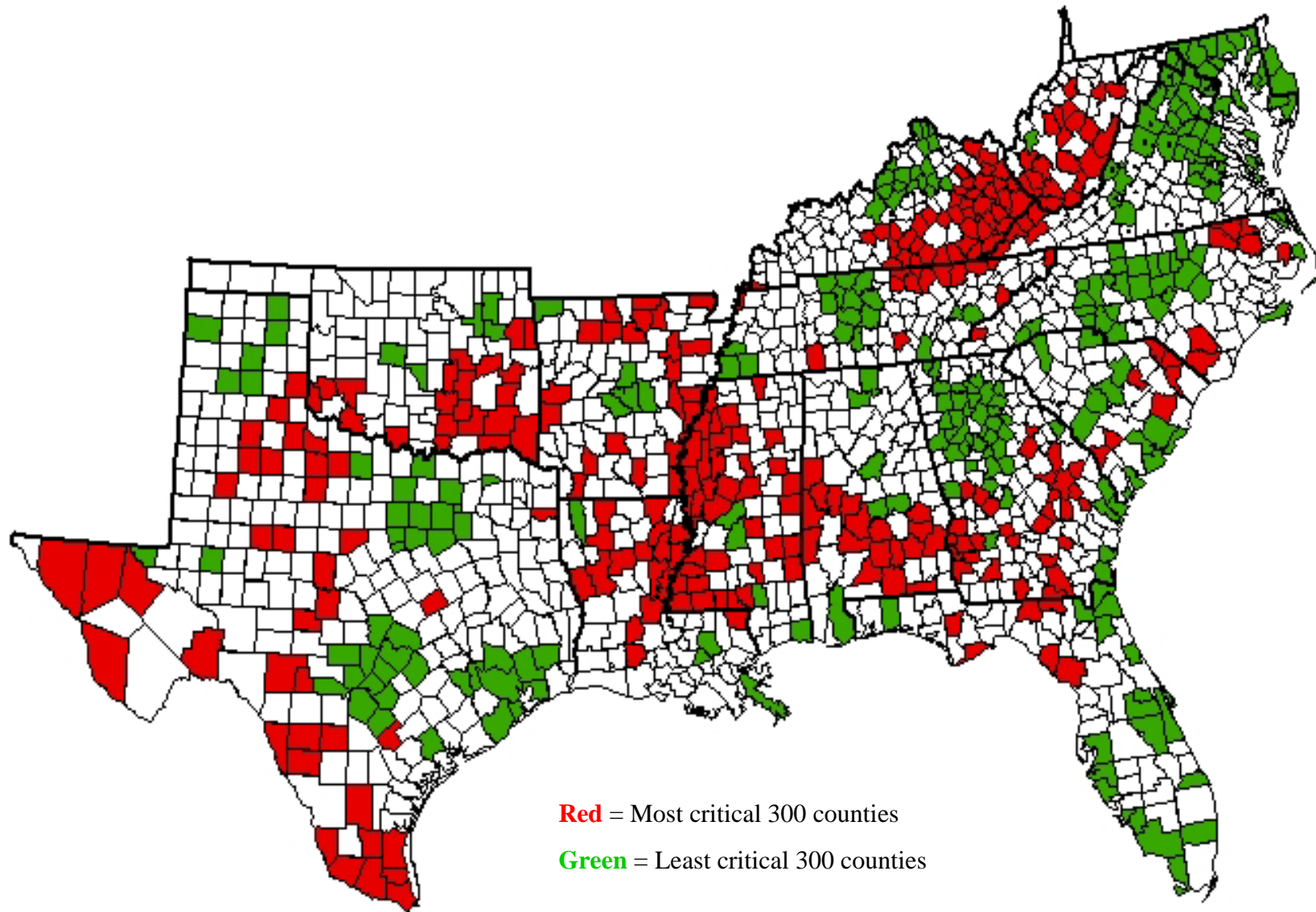
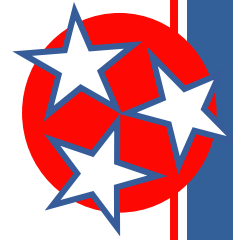


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Median Household Income, 2000

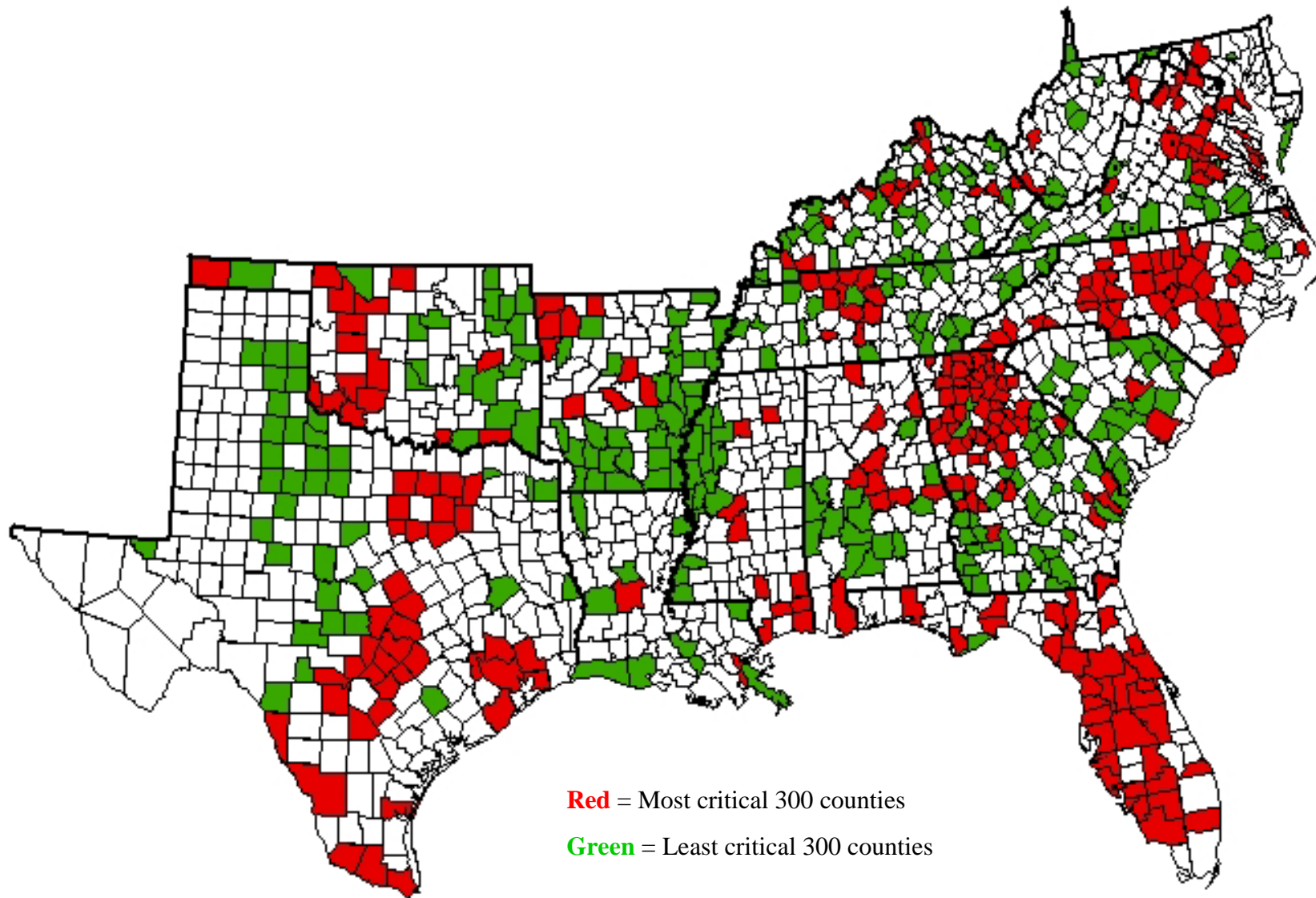
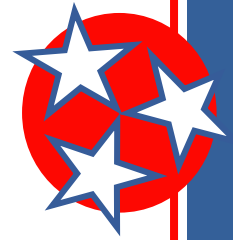


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Projected Population Growth, 2000-2010

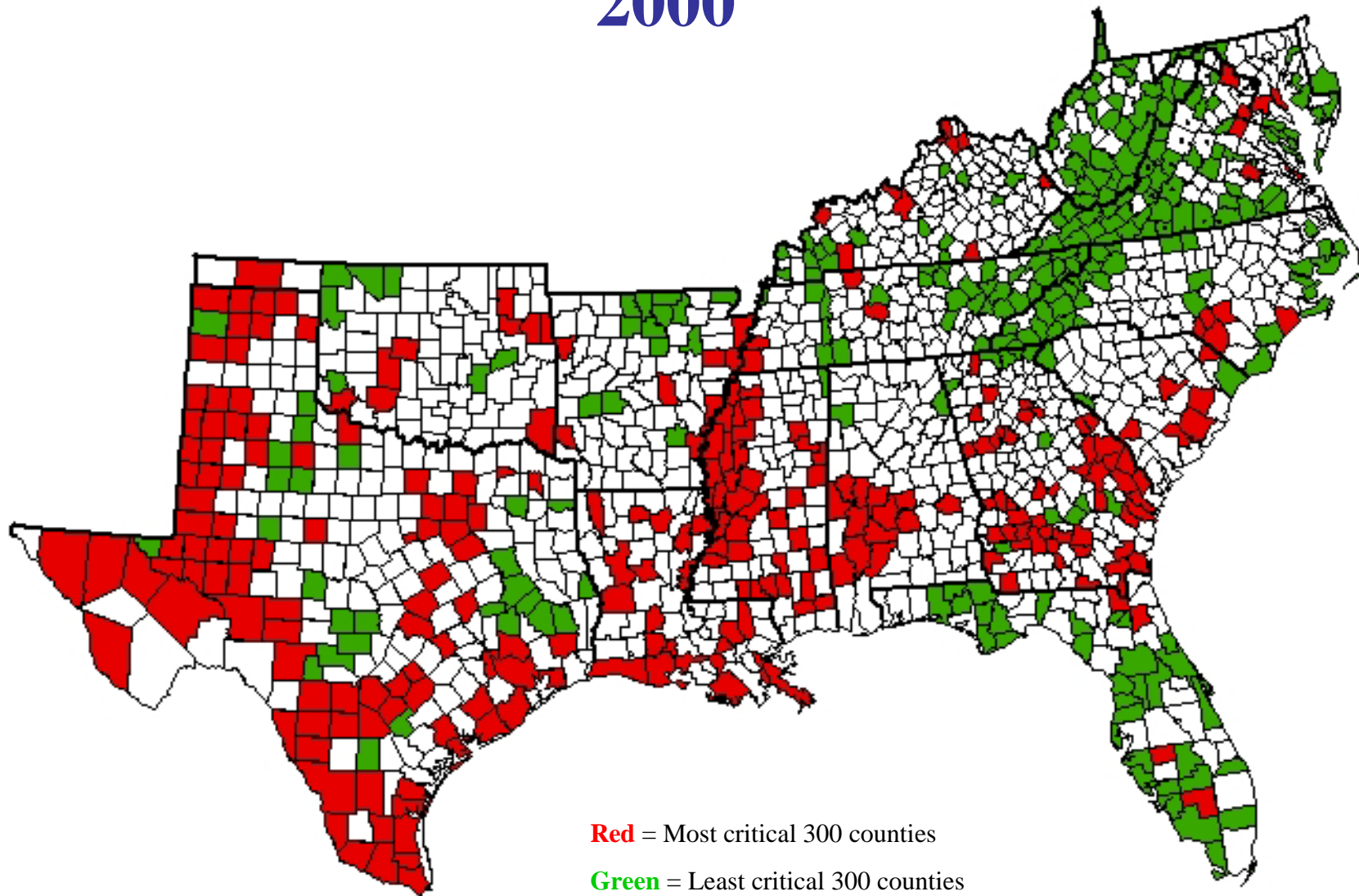


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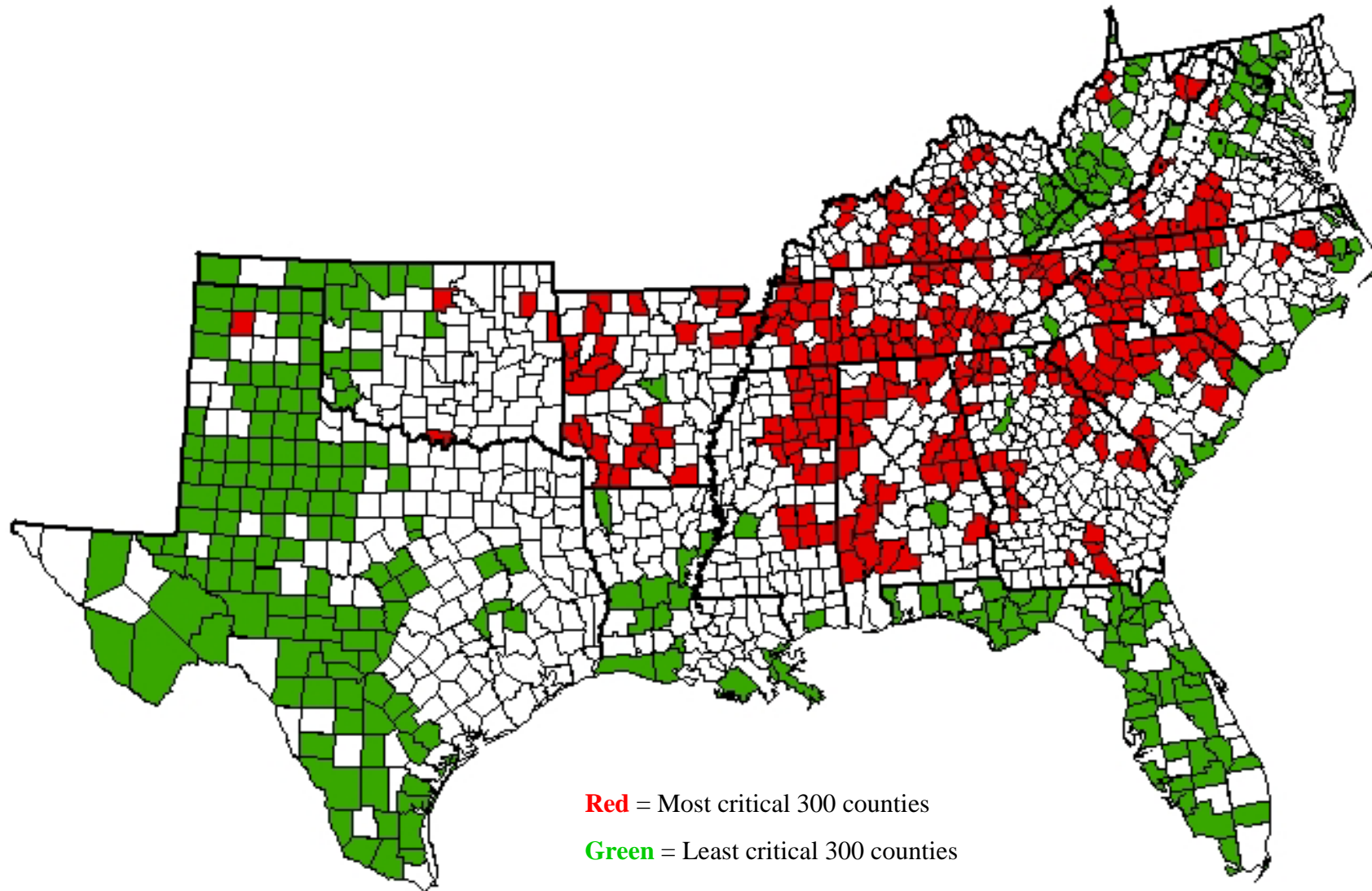
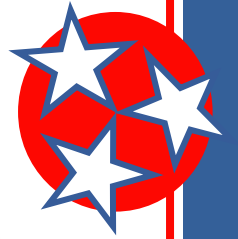
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Population Age 0-19 as Percent of County, 2000



Manufacturing as Percent of Employment, 2000



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Improving the State Policy Toolbox



- The geographic and demographic diversity of the SREB region provides challenges to those planning for the delivery of private or public goods and services.
- As recently noted by the *Southern Growth Policies Board*, states need to build and maintain a more complete demographic profile of their workforce ...
 - This profile should take into account the *educational, economic, and population growth factors* of all counties in the region, thereby providing a clear picture of workforce opportunities and challenges.



The Educational Needs Index



Educational Factors (40% of ENI)
Percent of the population 25 and older with a high school degree
Percent of the population 25 and older with a bachelor's degree
Percent of the population 25 to 64 with an associate degree
Economic Factors (25% of ENI)
Average unemployment over a 24 month period of time (Jan. 2000-Dec. 2001)
Percent of population in poverty
Median household income
Per capita income
Growth Factors (20% of ENI)
Projected population growth from 2000 - 2010
Rate of population growth from 1990 - 2000
Ratio of Births to Deaths, 1990 - 1999
Population age 0-19 as percent of the overall population
Market Factors (10% of ENI)
Population age 20-44 as percent of overall population
Minorities as a percent of population (includes African American and Hispanic)
Manufacturing employment as a percent of industry
Population Adjustment Factors (5% of ENI)
Percent of the state's population age 0-19
Percent of the state's population age 20-44



Index Formulas and Theoretical Construct



For Each Category:

$$\textbf{Factor Score} = (Z1 + Z2 + \dots Z_n)/n$$

For County's Overall Index Score:

Educational Needs Index =

$$\begin{aligned} &(\text{Educ})(0.40) + (\text{Econ})(0.25) + (\text{Growth})(0.20) + \\ &(\text{Market})(0.10) + (\text{Pop. Adj.})(0.05) \end{aligned}$$

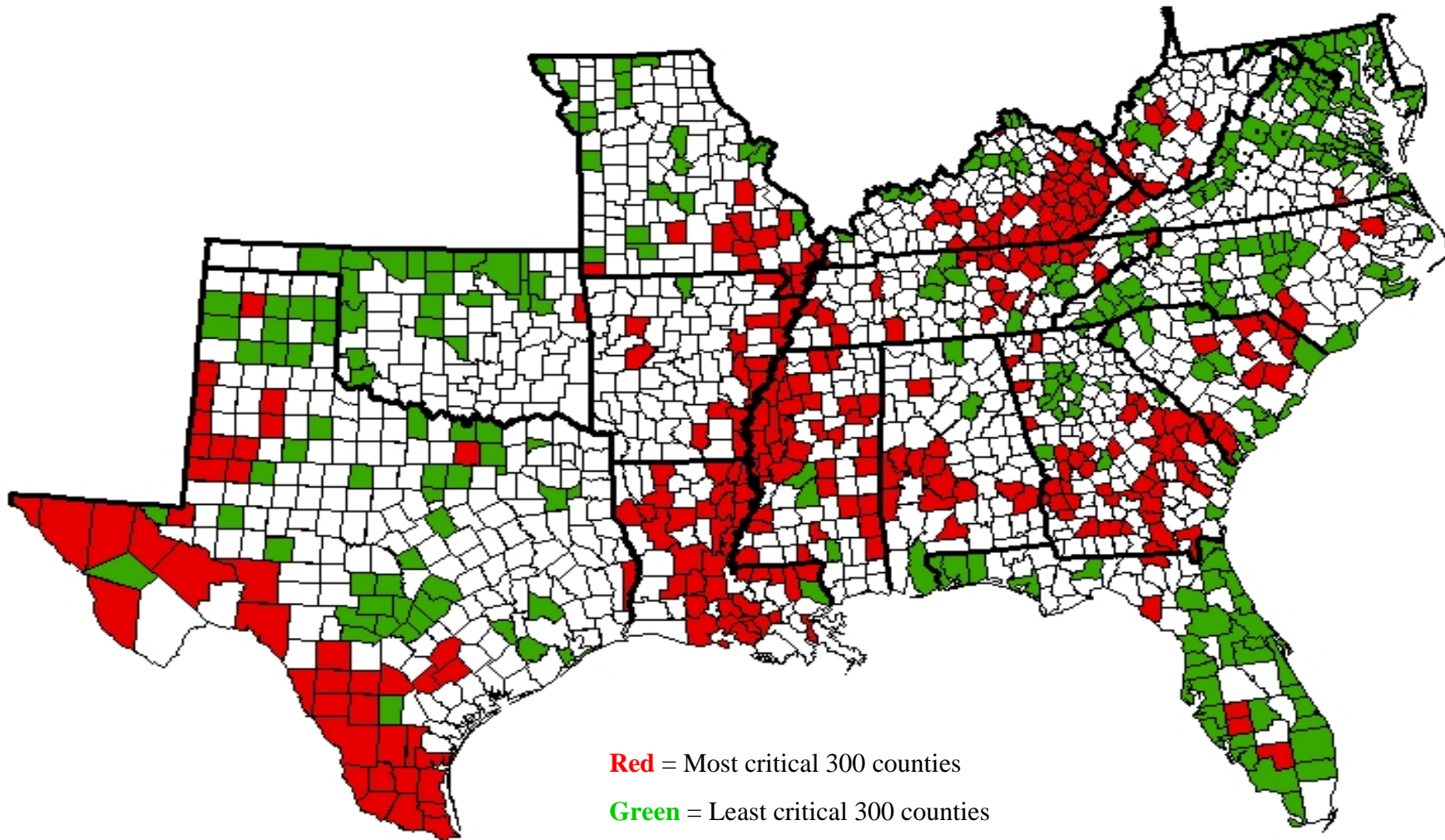
Particular Attention Paid to Social Indicators Literature

Ex. Human Capital, Quality of Life, and Human Development Indices;
Economic Indices such as GDP and CPI

Strengths, Weaknesses, and Recommendations from Lind (1992), Jordan
(1992), Larsen (1994) & Diener (1995)



Assessing Regional Diversity by County: *The Educational Needs Index*

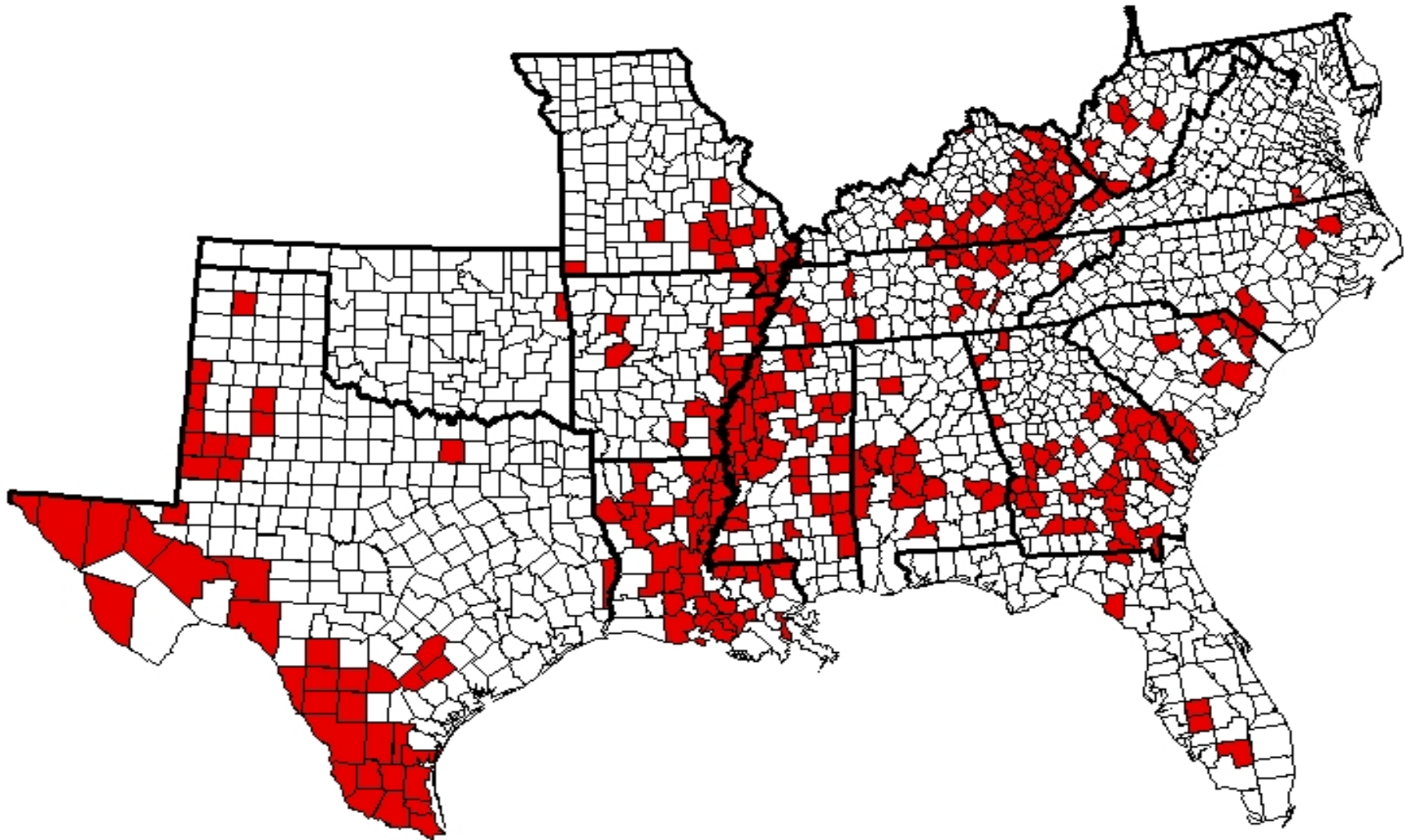
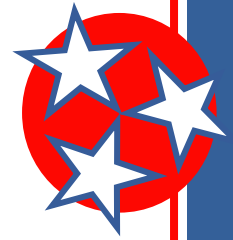


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Overall Analysis for the Region

ENI – Most Critical 300 in South

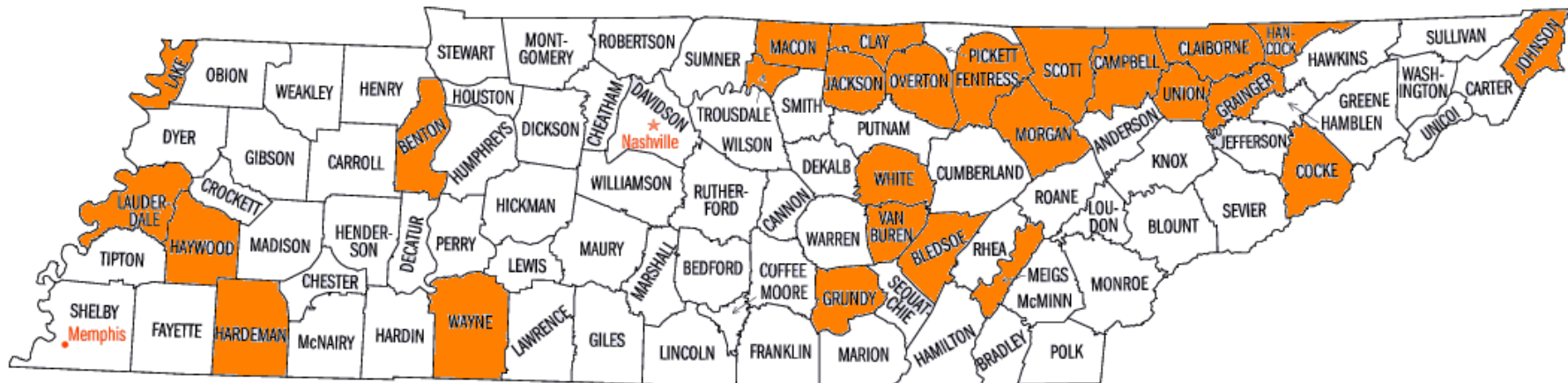


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Tennessee

ENI – Most Critical 300 in South

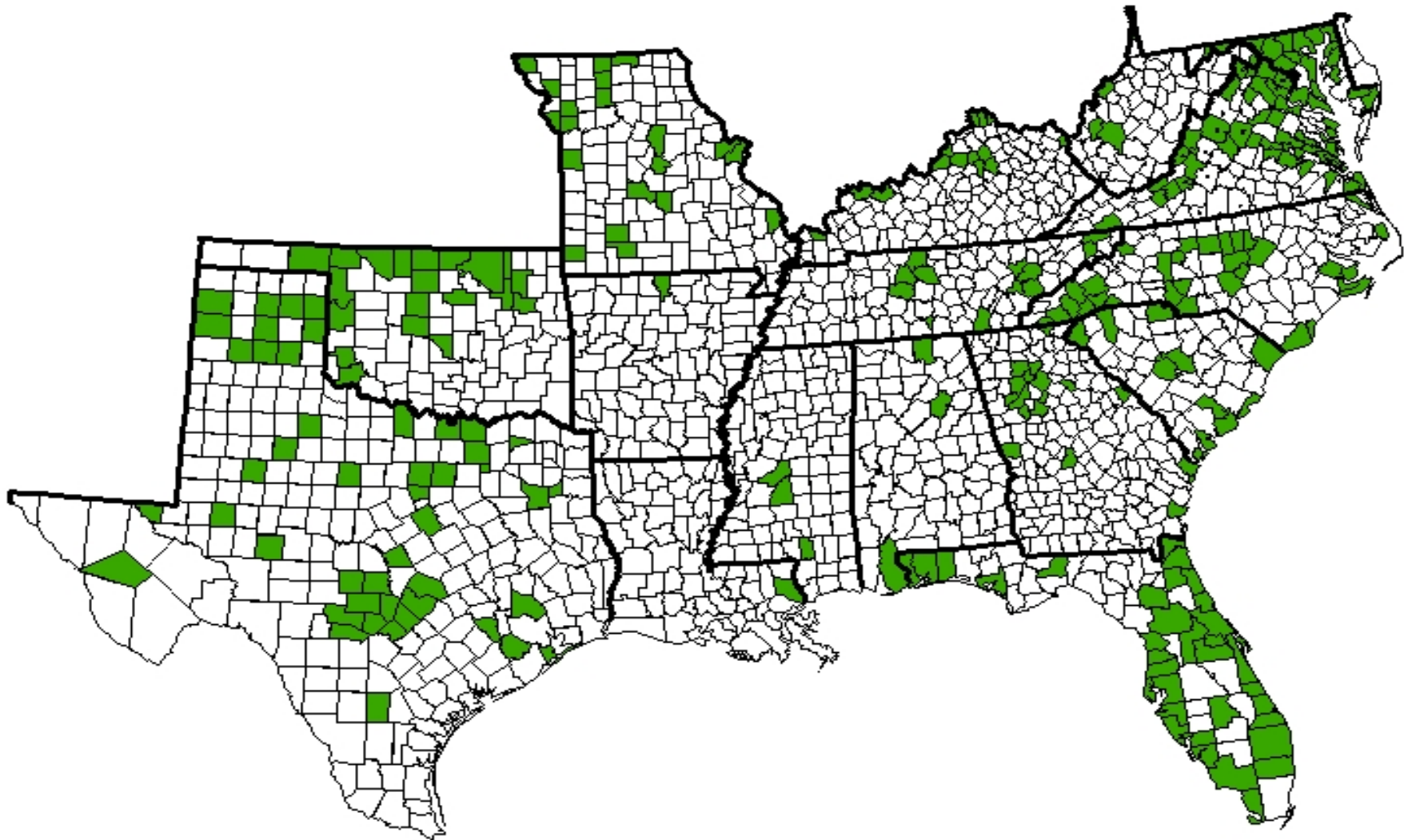
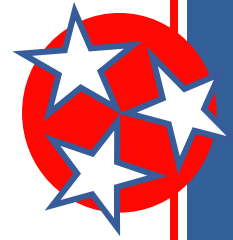


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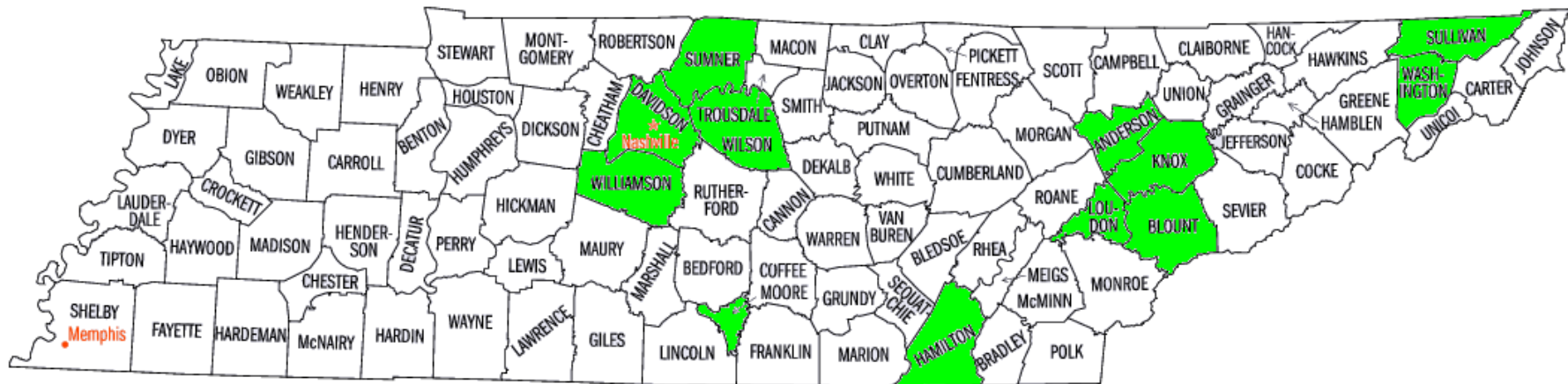


Noland and Davis, 2004



Tennessee

ENI – Least Critical 300 in South



Noland and Davis, 2004



Educational Needs Index



Analysis of 1,538 Counties in the South - Most/Least Critical (Quintiles)					
	# of Counties in State	# in 300 Most Critical	% in 300 Most Critical	# in 300 Least Critical	% in 300 Least Critical
Alabama	67	13	19%	3	4%
Arkansas	75	14	19%	1	1%
Delaware	3	0	0%	0	0%
Florida	67	5	7%	34	51%
Georgia	159	44	28%	17	11%
Kentucky	120	44	37%	14	12%
Louisiana	64	35	55%	1	2%
Maryland	24	0	0%	18	75%
Missouri	115	13	11%	20	17%
Mississippi	82	35	43%	3	4%
North Carolina	100	4	4%	30	30%
Oklahoma	77	1	1%	20	26%
South Carolina	46	11	24%	9	20%
Tennessee	95	26	27%	12	13%
Texas	254	44	17%	47	19%
Virginia	135	3	2%	64	47%
West Virginia	55	8	15%	7	13%



Regional Overview - Observations



- There is a critical link between educational attainment and social, economic, and demographic variables.
- The challenges facing the SREB region run deeper than conventional urban/rural classifications.
- The historic challenges of regions such as Appalachia, the Delta, and the “border counties” are constant across all variables.
- Enterprise zones in specific sub-regions of the SREB create opportunities for human capital development and economic expansion.
- States must take the time to explore forecasted industry and occupational trends and examine the alignment of academic program inventories with those emerging trends.



Implications - Employment Projections (2002-2012)



- From 2002-12, total employment is projected to grow by 15%.
- Over the previous decade, employment grew at a faster rate, 17% (BLS, 2004).
- The increase in the number of new job starts is slowing due to a variety of factors
 - Function of productivity & technology
 - Decreased reliance on skill sets and jobs that “technology” has replaced.

Source: Bureau of Labor Statistics, U.S. Department of Labor, Projections on Future Job Growth by Industry and Occupation, 2002-2012, Released February 2004.



Implications - Industrial Growth Trends (2002-2012)

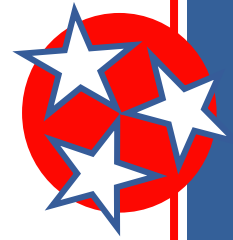


- Positive job growth (*BLS, 2004*)
 - Education and Health Services
 - Professional & Business Services
 - Information Technology
 - Leisure & Hospitality
 - Transportation & Warehousing
 - Construction (this is the only “Goods-Producing” industry sector to project growth)
- Negative job growth (*BLS, 2004*)
 - Manufacturing – Textile Mills; Apparel Manufacturing; Computer & Electronic Product Manufacturing

Source: Bureau of Labor Statistics, U.S. Department of Labor, Projections on Future Job Growth by Industry and Occupation, 2002-2012, Released February 2004.



Implications - Occupational Trends (2002-2012)



- Greatest increases in Professional & Related occupations and Service occupations (BLS, 2004)
 - Potential for gaps in earnings only increase because of the education/training gaps between these areas.
 - Another threat to middle-aged and under-educated workers is that the Service Occupations can be dominated by the young as a form of “transitional job” while pursuing education and training
- Greatest decreases in Office & Administrative Support, Production, and Farming, fishing, & forestry (BLS, 2004)

Source: Bureau of Labor Statistics, U.S. Department of Labor, Projections on Future Job Growth by Industry and Occupation, 2002-2012, Released February 2004.



Implications - Education and Training Needs (2002-2012)



- 9 of the 10 fastest growing occupations are in the Health or Information Technology Fields
- Associates degree or baccalaureate degree are necessary for 6 of the 10
- Of the 4 remaining, all require a very solid educational background and/or “learning” skill sets

Each state has to examine the relationship between these forecasts and the education and training opportunities that are available to their citizens.

Source: Bureau of Labor Statistics, U.S. Department of Labor, Projections on Future Job Growth by Industry and Occupation, 2002-2012, Released February 2004.



Regional Overview - Conclusions



- Shifting population and demographic trends will have a significant impact on all states in the SREB region.
- States must implement policies to rectify the human capital deficit ...
 - These include keeping more college graduates in state, identifying gaps in the P-16 pipeline, increasing adult literacy and lifelong learning, and attracting college graduates into the region.
- States must continually invest in their educational infrastructure remaining ever mindful that postsecondary education is the engine that drives the Knowledge Economy.
- Higher education as an enterprise should be analyzed to ensure that state-wide and regional goals are achieved.



**For additional information on the
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For hard copies of the ENI report visit:

http://www.state.tn.us/thec/2004web/division_pages/pub_news_pages/publications.html

Davis, H. and Noland, B. 2003. "Understanding Human Capital Through Multiple Disciplines: The Educational Needs Index." *Journal of Social Indicators Research*. 61 (147-174).

